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BRIEF REPORT: Social Characteristics of Students with Autism Spectrum Disorders Across Classroom Settings

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Abstract

Social Characteristics of Students with autism spectrum disorders across Classroom Settings The current study examined the differences in social characteristics between students with autism spectrum disorders (ASD) primarily educated in full inclusion and non full inclusion classrooms. One hundred and forty six parents of children with ASD completed a questionnaire regarding the social experiences of their child. Results indicate that after controlling for severity of disability and age, higher social competence was related to placement in full inclusion classrooms. Regression analyses indicate that ASD severity predicted social competence and quality of friendships, and age and problem behaviour predicted the number of friends outside school. Implications for future studies are discussed.

The rate of students with autism spectrum disorders (ASD) in full inclusion classrooms has greatly increased over the last decade due to parent advocacy, advocacy of the educational community (Zigler & Hodapp, 1987), and the adoption of principles of normalization (Wolfensberger, 1972). One of the most cited benefits of inclusion for elementary school children with developmental disabilities is increased social interaction with typically developing peers, and the consequent development of appropriate social skills (e.g., Kennedy, Shikla, & Fryxell, 1997). Researchers have found that preschool students with disabilities in full inclusion classrooms spend more time observing and being in close proximity with peers, exhibit increased social interactions, and report larger social networks than students in non full inclusion classrooms (for a review see Buysse & Bailey, 1993).

It is important to consider the characteristics of students that influence classroom placement decisions. Among students with ASD at the preschool and elementary school level, those who are younger, higher functioning, and exhibit fewer behavioural problems tend to be placed in full inclusion classrooms (Yianni-Coudurier et al., 2008; Eaves & Ho, 1997). Research has yet to investigate the relationship between social characteristics and friendship networks of youth with ASD and their classroom placement. Understanding social competencies and interaction patterns in various classroom settings is crucial for informing classroom placement decisions among children with ASD.

The current study was undertaken to identify the relationships between placement in full inclusion and non full inclusion classrooms at the elementary school level and social characteristics of students with ASD. It was hypothesized

that students in full inclusion classrooms would exhibit more social competence and report better quality friendships than students in non full inclusion classrooms.

Method

Participants

One hundred and forty-six parents of children with ASD participated in the study. The children ranged in age from 6 to 12 years (*M* = 9.17 years, *SD* = 1.86). Approximately 88% of students were male. Student diagnoses included Asperger's syndrome (45%), autism (23%), high functioning autism (21%) and Pervasive Developmental Disorder-Not Otherwise Specified (11%). The majority of the sample (81%) was primarily educated in a full inclusion classroom and 19% were primarily educated in non full inclusion classrooms. Students did not differ between classroom settings with regards to severity of ASD symptoms, $t(118) = .83$, $p = .44$, or occurrence of problem behaviours, $t(114) = -.94$, $p = .35$. Age was the only variable that was significantly different across classrooms, with students in non full inclusion classrooms being significantly older than students in full inclusion classrooms, $t(145) = 1.94$, $p = .05$.

In regards to family characteristics, the majority of participants were the biological parents of the child with ASD (92%). In addition, 81.4% of the parents were married, 7.1% were single, 5.7% were divorced, and 5.7% were separated. Annual household incomes before taxes consisted of 9.3% participants earning $25000 or less, 10.9% earning $26,000 to $40,000, 15.5% earning $41,000 to $60,000, 17.8% earning $61,000 to $80,000, 15.5% earning $81,000 to $99,000, and 31% earning $100000 or more. Highest education completed among participants was as follows: some high school (2.2%), completed high school (14.4%), graduated college (38.8%), graduated university (27.3%) and obtained a post graduate degree (17.3%).

Procedure

This research was conducted as part of a larger study at York University ("Understanding Bullying in Children and Youth with Asperger Syndrome and Autism"), and was granted approval from the Human Participants Subcommittee at York University's Office of Research Ethics in 2009. Parents of students with ASD were recruited using online postings on local and national autism organization websites, as well as email listservs provided by these organizations. Interested parents were invited to complete an online survey regarding their child's social experiences. Informed consent was obtained before parents could access the survey. Data for the current study included all participants who responded between May 2009 and January 2010.

Measures

All measures were based on parent report.

Social competence. We defined social competence as the effective membership and integration into a peer group within the larger classroom setting (Boutot & Bryant, 2005), and measured it in a number of ways. The Parent Perception Measure-Socialization subscale (Lauderdale & Blacher, 2008; Lauderdale, Howell, & Kaladjian, 2009) was used to examine the effective socialization of children with ASD in school settings. The scale is made up of 12 behavioural statements (e.g., "my child plays with other students," "my child talks about his/her peers in a positive way") and parents rate each statement on a 5-point Likert scale. Higher scores indicate greater social competence. The Parent Perception Measure was found to possess good internal consistency in the current sample (MacMullin, Cappadocia, & Weiss, 2010). Parents were also asked to indicate the number of friends their child had inside and outside of school, and to rate the overall quality of their child's friendships on a single 5-point Likert scale. Higher scores indicated greater friendship quality.

ASD symptoms. The Autism Spectrum Quotient-Child Version (ASQ; Auyeung, Baron-Cohen, Wheelwright, & Allison, 2007) was used to assess the severity of ASD symptoms among children. The ASQ is made up of 50 behavioural statements (e.g., "she or he prefers to do things the same way over and over again," "she or he doesn't know how to keep a conversation going with his or her peers"). Parents rate each statement on a 4-point scale. Higher scores indicated more severe ASD symptomatology. The ASQ has good test-retest reliability and high internal

consistency, and has been shown to adequately quantify characteristics of children on the autism spectrum (Auyeung et al., 2007).

Child problem behaviours. The Nisonger Behavior Child Rating Form (NCBRF; Aman, Tasse, Rojahn, & Hammer, 1996) was used to quantify the occurrence of problematic behaviours (e.g., hyperactivity, conduct problems, insecurity). Research has supported the construct validity of the NCBRF, and it has been shown to possess good psychometric qualities (Aman et al., 1996).

Demographic information. We collected demographic information pertaining to the child (age, gender, diagnosis), and family characteristics (marital status, household income, parental education). A one-way ANOVA revealed an effect of parental education level on the Parent Perception Measure-Socialization subscale, $F(4, 121) = 3.84$, $p = .006$. Post hoc analysis using Bonferroni adjustment indicated that parents who had graduated university reported having children with greater socialization compared to parents who graduated college ($p = .04$) or high school ($p = .006$). There was no differences though in socialization scores between parents who obtained a post-graduate degree and other education levels. Parent education was not related to any other measure of social competence. There were no significant relationship among age, gender, diagnosis, parent marital status, and the social competence dependent variables (all $p > .05$). Parents provided information regarding their child's educational situation (whether their child is primarily educated in a full inclusion or non full inclusion classroom), and the availability of in school supports (behaviour therapists, part time educational assistant, or full time educational assistants). A Pearson product-moment correlation coefficient revealed a small negative correlation between the number of in school supports and quality of friendships, $r(142) = -.17$, $p = .05$. In school supports was not related to other social competence dependent variables.

Results

Four one-way analyses of covariance (ANCOVA) were used to test for differences in social competence between students in full inclusion and non full inclusion classrooms. Participant age and mean scores on the ASQ were used as covariates. As seen in Table 1, students in full inclusion classrooms displayed greater social competence than students in non full inclusion classrooms. There was also a trend for students in full inclusion classrooms to have more friendships inside school.

Four separate multiple regression analyses were conducted to explore the specific variables that may predict social success for students in full inclusion classrooms, including child age, gender, number of in school supports, ASD symptoms, and problem behaviours as potential predictor variables. As shown in Table 2, greater ASD symptom severity was associated with poorer social competence, as reflected by the PPM-Socialization measure, and with poorer friendship quality. Older age and increased problem behaviours were associated with fewer friends outside school.

Discussion

This study sought to identify the relationship among classroom placement and the social characteristics of elementary school students with ASD. After controlling for age and ASD symptom severity, students in full inclusion classrooms appeared to have greater social competence and more friends in school than students in non full inclusion classrooms. It may be that students in full inclusion classrooms have the advantage of being in close proximity with typically developing peers, thus creating more opportunities for friendships (Fryxell & Kennedy, 1995), whereas students in non full inclusion may interact exclusively with children who exhibit similar social difficulties. Alternatively, it may be that students with ASD who are higher functioning and have greater social skills are more likely to be included in the mainstream curriculum. Students in the two classroom settings did not differ in their degree of problem behaviour. Provided that teachers are well trained at managing disruptive behaviours associated with ASD (Helps, Jamieson, & Strain, 1999), it may be that students across settings are equally supported in their behavioural needs. It may also be that for youth in the current sample, educational placement has less to do with the types of problem

behaviours they may exhibit, and more with their academic and social learning needs.

For students in full inclusion settings, results identified less severe ASD symptoms as a predictor of more socialization and of better quality of friendships in school. Typically developing students tend to prefer being friends with popular, attractive classmates who have high academic ability, display good leadership skills, and are compliant with classroom rules (Adler, Kless, & Adler, 1992). Since students with ASD have greater social impairment, report difficulties with the academic curriculum, and have higher rates of problem behaviour than peers without ASD, those with the most severe ASD symptomatology are likely viewed by classmates as less desirable friend targets (Stiliadis & Wiener, 1989).

Exhibiting fewer problem behaviours and being younger predicted number of friends outside of school. The former is not surprising, as problem behaviours are known to significantly interfere with the formation of friendships (Ladd & Burgess, 1999). With regard to

Table 1. Means and Standard Deviations of Social Competence Measures

Measure	*Classroom* Full inclusion M (SD)	Non full inclusion M (SD)	*F*	*p*
Parent perception socialization measure	3.31 (.63)	2.90 (.63)	4.63	.03*
Number of friends inside school	2.69 (1.95)	1.47 (1.83)	3.53	.06
Number of friends outside school	1.66 (1.73)	1.59 (1.68)	.27	.61
Friendship quality	2.16 (.81)	2.04 (.81)	.04	.95

*$p < .05$

Table 2. Predictors of Social Competence and Friendships for Students with ASD in Full Inclusion Classrooms

	Parent perception socialization		*Number of friends inside school*		*Number of friends outside school*		*Friendship quality*	
	B	*p*	*B*	*p*	*B*	*p*	*B*	*p*
Age	-0.11	.27	-0.13	.26	-0.22	.05*	-0.16	.13
Gender	-0.05	.58	-0.11	.35	0.02	.83	0.16	.12
In school supports	-0.07	.47	-0.05	.69	0.02	.88	-0.15	.17
ASD severity	-0.47	<.001**	-0.12	.35	-0.13	.24	-0.22	.04*
Problem behaviour	-0.04	.71	-0.10	.42	-0.26	.03*	-0.15	.19

*$p < .05$, **$p < .01$

age, the social skills required to develop and maintain friendships become more complex as children get older (Dunn, 1996). As children with ASD progress through the years, the gap between their social skills and what is socially expected of them by peers may widen, creating a friendship disparity. Parents of children with ASD may also play a major role in setting the stage for friendships outside school at younger ages, but as their children progress into higher grades, it becomes less acceptable for parents to be involved in initiating and maintaining friendships (Bhavnagri & Parke, 1991).

Limitations to this study include a small sample of non full inclusion students, and reliance on parental report. It is also not clear whether classrooms facilitate social development, or students with greater social competence are more likely to be placed in the full inclusion stream. Future studies may wish to explore the progression of social development (e.g., across various time points) among students in full inclusion and non full inclusion streams, and the effect of full inclusion classrooms on youth social skills and networks. Finally, it may be worthwhile to investigate the additional characteristics that predict social success for students with ASD, such as language and cognitive abilities, or physical health. Such research is important if we are to provide the most effective educational experiences, and foster social learning for this unique population.

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